

What is claimed is:

Sub  
Q1  
1. A resin dispersion comprising solid particles of a graft modified ethylene/ $\alpha$ -olefin random copolymer dispersed in an organic solvent, wherein the graft modified ethylene/ $\alpha$ -olefin random copolymer has the following properties:

(a) the copolymer contains components derived from ethylene and an  $\alpha$ -olefin of 6 to 20 carbon atoms, the content of the ethylene component is in the range of 75 to 97 % by mol, and the content of the  $\alpha$ -olefin component is in the range of 3 to 25 % by mol, each content being based on 100 % by mol of the total of both components,

(b) the intrinsic viscosity ( $\eta$ ) as measured in decalin at 135°C is in the range of 0.2 to 5.0 dl/g, and

(h) the copolymer contains a graft component derived from a polar monomer, and the content of the polar monomer graft component is in the range of 0.1 to 15 % by weight.

2. The resin dispersion as claimed in claim 1, wherein the graft modified ethylene/ $\alpha$ -olefin random copolymer further has the following properties:

(c) the glass transition temperature ( $T_g$ ) is not higher than -40°C,

(d) the crystallinity as measured by X-ray diffractometry is less than 30 %, and

006080-030900

Sub  
a (e) the molecular weight distribution (Mw/Mn) as  
measured by GPC is not more than 3.

Sub  
b 3. The resin dispersion as claimed in claim 2, wherein  
5 the graft modified ethylene/ $\alpha$ -olefin random copolymer further  
has the following properties:

(f) the B value as calculated from the following  
equation is in the range of 1.0 to 1.4:

$$B \text{ value} = POE / (2PO \cdot PE)$$

10 wherein POE, 2PO and PE are each a parameter determined from  
the  $^{13}C$ -NMR spectrum, PE and PO are a molar fraction of  
ethylene and a molar fraction of the  $\alpha$ -olefin, respectively,  
to the total number of moles of the ethylene component and the  
 $\alpha$ -olefin contained in the modified ethylene/ $\alpha$ -olefin random  
15 copolymer, and POE is a proportion of the number of  
ethylene/ $\alpha$ -olefin alternating sequences to the number of all  
dyad sequences.

Sub  
a 4. The resin dispersion as claimed in claim 1, wherein  
20 the dispersed solid particles of the modified ethylene/ $\alpha$ -  
olefin random copolymer have particle diameters (measured by a  
Coulter Counter) of 5 to 50  $\mu m$ .

006080-6670960

Sub B7  
5. The resin dispersion as claimed in claim 1, wherein the solid concentration of the resin dispersion is in the range of 3 to 50 % by weight.

5 6. The resin dispersion as claimed in claim 1, wherein the ethylene/ $\alpha$ -olefin random copolymer has been prepared by the use of a metallocene catalyst.

Sub A37  
10 7. A process for preparing a resin dispersion, comprising grafting a polar monomer on an unmodified ethylene/ $\alpha$ -olefin random copolymer having the following properties:

(a') the copolymer contains components derived from ethylene and an  $\alpha$ -olefin of 6 to 20 carbon atoms, the content of the ethylene component is in the range of 75 to 97 % by mol, and the content of the  $\alpha$ -olefin component is in the range of 3 to 25 % by mol, each content being based on 100 % by mol of the total of both components, and

(b') the intrinsic viscosity ( $\eta$ ) as measured in decalin at 135°C is in the range of 0.2 to 5.0 dl/g,

to prepare a graft modified ethylene/ $\alpha$ -olefin random copolymer containing 0.1 to 15 % by weight of a graft component derived from the polar monomer, and then dispersing solid particles of the graft modified copolymer in an organic solvent.

006080" E68T0960

SUB  
a37

8. The process for preparing a resin dispersion as claimed in claim 7, wherein the unmodified ethylene/ $\alpha$ -olefin random copolymer further has the following properties:

5 (c') the glass transition temperature ( $T_g$ ) is not higher than  $-40^\circ\text{C}$ ,

(d') the crystallinity as measured by X-ray diffractometry is less than 30 %, and

(e') the molecular weight distribution ( $M_w/M_n$ ) as  
10 measured by GPC is not more than 3.

SUB  
B17

9. The process for preparing a resin dispersion as claimed in claim 8, wherein the unmodified ethylene/ $\alpha$ -olefin random copolymer further has the following properties:

15 (f') the B value as calculated from the following equation is in the range of 1.0 to 1.4:

$$B \text{ value} = \text{POE} / (2\text{PO} \cdot \text{PE})$$

wherein POE, 2PO and PE are each a parameter determined from the  $^{13}\text{C}$ -NMR spectrum, PE and PO are a molar fraction of  
20 ethylene and a molar fraction of the  $\alpha$ -olefin, respectively, to the total number of moles of the ethylene component and the  $\alpha$ -olefin contained in the modified ethylene/ $\alpha$ -olefin random copolymer, and POE is a proportion of the number of  
25 ethylene/ $\alpha$ -olefin alternating sequences to the number of all dyad sequences.

006080-6670960

Sub  
B17

10. The process for preparing a resin dispersion as claimed in claim 9, wherein the unmodified ethylene/ $\alpha$ -olefin random copolymer is a linear ethylene/ $\alpha$ -olefin random copolymer having the following properties:
- (g'), the ratio ( $g\eta^*$  ( $=(\eta)/(\eta)_{\text{blank}}$ ) of the intrinsic viscosity ( $\eta$ ) measured as the property (b') to the intrinsic viscosity ( $\eta$ )<sub>blank</sub> of a linear ethylene/propylene copolymer having the same weight-average molecular weight (by light scattering method) as that of the unmodified ethylene/ $\alpha$ -olefin random copolymer and having an ethylene content of 70 % by mol is a value exceeding 0.95.

Sub  
a47

11. The process for preparing a resin dispersion as claimed in claim 4, wherein the resin dispersion of claim 1 is prepared.

Sub  
B17

12. A process for producing a resin-coated metal plate, comprising applying the resin dispersion of claim 1 to a metal plate to form a coating film.

13. The process for producing a resin-coated metal plate as claimed in claim 12, wherein a finish coating is applied to the coating film to form a finish layer.

Sub  
B7

14. A process for producing a laminate, comprising  
applying the resin dispersion of claim 1 to a metal plate to  
form an adhesive layer and laminating a polyolefin sheet or  
film on the metal plate by means of the adhesive layer.



006080" E68T0960